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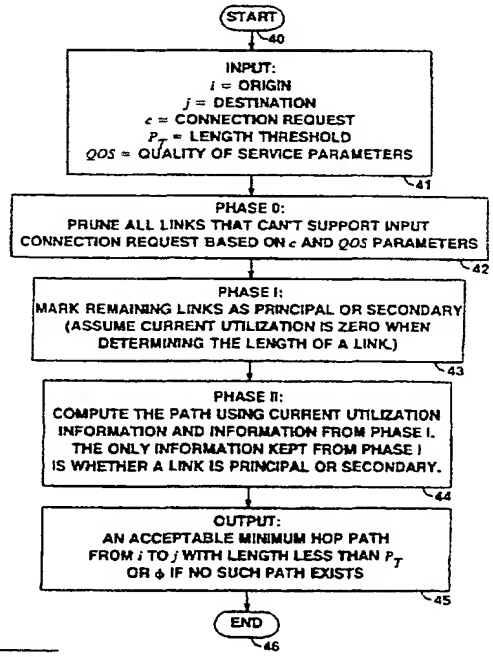
(54) Method and apparatus for optinum path selection in packet transmission networks.

(57) A packet communications system utilizes a route determining mechanism by identifying principal paths between the source and the destination in the system. Principal paths are minimum hop count paths with a transmission delay less than a specified threshold. Principal path links are accepted as legs of the optimum path, if feasible, i.e., if the resulting load on the link is less than a specified principal threshold. Secondary links are accepted only if the resulting load on the link is less than a specified secondary threshold, where the secondary threshold is less than the principal threshold. All paths must also have a transmission delay less than a specified threshold. Each request for a route includes the source node, the destination node, the load required, the maximum transmission delay and, if desired, the quality of service parameters which all of the legs of the route must satisfy. A modified Bellman-Ford breadth-first search algorithm is used to identify the principal links and, using these principal link identifications, determining the optimum path.

FIG. 5
PATH DETERMINATION PROCEDURE



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EUROPEAN SEARCH REPORT

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EP 93 48 0030

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
X	EP-A-0 398 614 (BRITISH TELECOMMUNICATIONS) 22 November 1990 * abstract; figure 1 * * page 11, line 24 - page 12, line 10 *	1,6,11	H04L12/56
A	PROCEEDINGS OF THE JOINT CONFERENCE OF THE IEEE COMPUTER AND COMMUNICATIONS SOCIETIES (IEEE INFOCOM '91), vol.3, 7 April 1991, BAL HARBOUR, US pages 1206 - 1213, XP223448 AWERBUCH, B. ET AL. 'Approximate Distributed Bellman-Ford Algorithm' * the whole document *	2,7,12	
A	EP-A-0 215 463 (HITACHI,LTD.) 25 March 1987 * abstract; figure 5 *	3,8,13	
A	US-A-5 081 620 (GIRARD ET AL.) 14 January 1992 * abstract *	4,9,14	
			TECHNICAL FIELDS SEARCHED (Int.Cl.5) H04L

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	27 October 1994	Revellio, H.S.

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CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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